

SCICOM Steering Group on Sustainable Use of Ecosystems (SSGSUE) Resolutions

2009/2/SSGSUE01 The Working Group on Marine Habitat Mapping (WGMHM), chaired by Jacques Populus, France, will meet in Calvi, France (at the Stareso Marine Station), 3–7 May 2010 to:

International programmes

- a) Report on progress in international mapping programmes (including OSPAR & HELCOM Conventions, EuSeaMap, EC & EEA initiatives, CHARM, Prehab, Sesma and Mesh-Atlantic projects);

National programmes (National Status Reports)

- b) Present and review national habitat mapping activity during the preceding year, providing National Status Report updates according to the standard spreadsheet reporting format and in geographic display in the ICES webGIS and focusing on particular issues of relevance to the rest of the meeting;

Modelling

- c) Evaluate recent advances in marine habitat modelling techniques;

Protocols and standards for habitat mapping

- d) Report on advances on survey strategy and data collection and develop guidelines for data collection by completing the list of recommended operating guidelines (ROGs) produced by Mesh (with particular emphasis on, but not limited to grabs, sonar interferometry, PSA etc.);
- e) Report on progress in post processing and interpreting data (e.g. Sonarscope);

Accuracy and confidence

- f) Review methods for accuracy and confidence assessment on both modelled maps and interpreted maps and initiate production of written guidelines;

Uses of habitat mapping for management

- g) Review practise about the use of habitat maps in different countries for various purposes.

Future terms of reference

Develop terms of references based on a plan of work for the next two years which complement the ICES science plan.

WGMHM will report by 28 May 2010 (via SSGSUE) for the attention of SCICOM and ACOM.

Supporting Information

Priority	This Group coordinates the review of habitat classification and mapping activities in the ICES area and promotes standardization of approaches and techniques to the extent possible.
Scientific justification	The WG provides an important forum to present and discuss the progress of multinational programmes, in particular, within the Regional Conventions

	<p>(OSPAR and HELCOM), the EU and its funding instruments (Interreg and FP7 programmes) and the EEA. The strategies, standards and issues addressed by each programme need to be assessed to facilitate sharing of best practice, sharing of difficulties and to work towards integration of resultant maps if feasible.</p> <p>The compilation of National Status Reports is required to keep abreast of current activities and bring attention to new initiatives, developing techniques and data availability. It enables the group to keep record of current progress in mapping coverage in Europe and gives visibility to the wider community.</p> <p>Marine habitat modelling is a growing area of research, with multiple approaches and techniques. WGMHM should share and develop best practice in this field.</p> <p>In recent years there have been considerable advances in the use of remote acoustic techniques for marine mapping. There is a need to examine how we use these techniques are validated through ground-truth sampling and to provide suitable guidance. Similarly, maps developed through modelling need validation and associated guidance. Issues about accuracy and confidence in marine habitat mapping, to better inform end users of potential limitations in the maps, is coming of age and need to be synthesised and reported.</p> <p>Habitat maps can be presented in a variety of ways and levels of detail, depending on their purpose. Examination of presentation techniques linked to end-user requirements could help improve the outputs in the framework of marine spatial planning.</p>
Participants	Representatives from Member Countries with experience in habitat mapping and classification. Participation of the Baltic countries and from USA and Canada is particularly sought. The participation of members of BEWG, WGEXT, WGECO, WGDEC, WGFAST and WGICZM would be helpful in developing appropriate linkages to other areas of ICES work.
Linkage to advisory committee	ACOM
Linkages to other committees or groups	BEWG, WGEXT, WGECO, WGDEC, WGFAST and SGEH, WGICZM
Linkages to other organizations	OSPAR, HELCOM, EEA

2009/2/SSGSUE02 The **Study Group on Fisheries-Induced Adaptive Change** (SGFIAC) will be renamed the **Working Group on Fisheries-Induced Evolution** (WGEVO), chaired by M. Heino, Norway; U. Dieckmann, Austria; A. D. Rijnsdorp, The Netherlands, will meet at the ICES Headquarters in Copenhagen, Denmark, 26–30 April 2010 to:

- a) Provide a forum for international collaboration and exchange of emerging scientific insights on fisheries-induced evolution;
- b) Assemble and review empirical evidence of fisheries-induced evolution and its consequences for the conservation of biodiversity and sustainable exploitation of marine species within an ecosystem context;
- c) Develop the Evolutionary Impact Assessment (EvoIA) framework and apply it to the specific challenges arising from fisheries-induced evolution and its consequences, including the following subtasks: (i) evaluate the impact of existing management measures and tools, such as minimum mesh and landing sizes, precautionary reference points, marine protected areas, and effort regulations, on fisheries-induced evolution; (ii) relate consequences of fisheries-induced evolution to stakeholder utilities and to current management objectives and explore possible more specific objectives for managing fisheries-induced evolution;
- d) Develop scientific and methodological tools to monitor and respond appropriately to risks to biodiversity and sustainable exploitation posed by fisheries-induced evolution, with a particular emphasis on making these tools readily available for a broader range of scientists and managers;
- e) Develop terms of references based on a work plan for the next three years, which complement the objectives of the ICES science plan.

WGEVO will report by 15 May 2010 (via SSGSUE) for the attention of SCICOM and ACOM.

Supporting Information

Priority	The activities of the WGEVO Working Group will provide ICES with a basis for advice on whether and how the effects of fisheries-induced evolution need to be taken into account in future management. Such advice is needed in relation with the precautionary approach, the ecosystem approach, biodiversity conservation, and the evaluation of risk and uncertainty.
Scientific justification	<p>Fisheries-induced evolution can negatively impact biodiversity and the value of renewable marine resources. Evolutionary changes often unfold on decadal timescales but are difficult to reverse, and may often be irreversible in practice. Evidence that fisheries-induced evolution is occurring is mounting, and consideration of such changes needs to be part of the sustainable management of marine ecosystems. While fundamental scientific questions relating to the strength of the current empirical evidence and to the taxonomic and geographic prevalence of fisheries-induced evolution are topics of vibrant research, the precautionary approach requires consideration and development of cost-effective monitoring strategies and management options.</p> <p>Operating since 2007, the Study Group on Fisheries-Induced Adaptive Change (SGFIAC) has demonstrated the scope for making progress in this area. Taking off from this springboard, the WGEVO Working Group will provide ICES with the forum and persistence required for responsibly addressing the implications of fisheries-induced evolution.</p> <p>Linkages exist with all three 'Thematic areas' in the ICES Science Plan 2009–2013:</p> <p>Understanding Ecosystem Functioning (research topics 'Fish life history information in support of EAM' and 'Biodiversity and the health of marine ecosystems').</p>

	<p>Understanding of Interactions of Human Activities with Ecosystems (research topic ‘Impacts of fishing on marine ecosystems’).</p> <p>Development of Options for Sustainable Use of Ecosystems (research topic ‘Marine living resource management tools’).</p> <p>Term of Reference a)</p> <p>An international forum transcending individual research projects and geographically limited activities has proven very valuable, as investigations of fisheries-induced evolution have broad geographic relevance and require bringing together a wide range of expertise.</p> <p>Term of Reference b)</p> <p>Significant research efforts are currently being invested within this area in several countries. The subject area will therefore benefit from a continual review of the progress being made, a joint evaluation of results obtained, and a free exchange of information for guiding future research and management.</p> <p>Term of Reference c)</p> <p>The new framework of Evolutionary Impact Assessments (EvoIAs) introduced by SGFIAC provides an integrative platform for assessing the consequences of fisheries-induced evolution and for evaluating how these are influenced by current and alternative management measures. WGEVO will therefore be in an excellent position to develop this framework further and to apply it to selected case studies.</p> <p>Term of Reference d)</p> <p>A basic set of statistical and modelling tools for dealing with fisheries-induced evolution are now available, but these need to be developed for greater flexibility, transparency, and ease of use. This includes establishing quality-controlled packages of software and scripts, linkage to other standardized platforms such as the Fisheries Library in R (FLR), and making selected tools available through the web.</p>
Resource requirements	The research activities providing input to WGEVO are ongoing, and corresponding resources have been committed by the engaged institutions. The resources for convening the annual WGEVO meeting are negligible.
Participants	SGFIAC was normally attended by 15–25 members and guests, and similar attendance is expected for WGEVO.
Secretariat facilities	None.
Financial	No financial implications.
Linkages to advisory committees	ACOM
Linkages to other committees or groups	For management implications: Working Group on Fishery Systems (WGFS). For more fundamental aspects: Working Group on the Application of Genetics in Fisheries and Mariculture (WGAGFM); Working Group on Ecosystem Effects of Fishing Activities (WGEVO).
Linkages to other organizations	None.

The Working Group on Large Marine Ecosystem Program Best Practices (WGLMEBP) has changed parent from the SCICOM Steering Group on Sustainable Use of Ecosystems (SSGSUE) to the SCICOM Steering Group on Regional Seas Programmes (SSGRSP). Full information for the WGLMEBP can be found in the SSGRSP Package.

2009/2/SSGSUE04 The Working Group on operational oceanographic products for fisheries and environment (WGOOFE), chaired by Morten Skogen, Norway, and Mark Dickey-Collas, the Netherlands, will meet twice in 2010 at IFREMER, Brest, France, 7–9 June 2010, and at IMR, Bergen 22–24 November 2010 to:

- a) Refine and critically evaluate the operational products to the needs of the users, including format and timing, and highlight appropriate and most operational products for each region;
- b) Continue intercessional development of the web based products (either from institutes, projects or individuals) for testing with other ICES WG (see TOR e) based on recommendations of the 2009 WGOOFE report;
- c) Identify gaps in the products available, and define new products from this;
- d) Develop criteria for WGOOFE housed products (e.g. the levels at which products should be available, the availability and perhaps registration for data, clarity of text, agreed terms and acronyms);
- e) Plan joint meetings to discuss product development with example ICES working group such as WGPBI and WGHAB;
- f) Initiate discussions with ICES data centre and WGDIM about appropriate housing of the WGOOFE web site in the future;
- g) Develop terms of references based on a work plan for the next two years, which complement the objectives of the ICES science plan.

WGOOFE will report by 1 December 2010 (via SSGSUE) for the attention of SCICOM and ACOM.

Supporting Information

Priority	There is an urgent need to incorporate the field of operational oceanographic products into ICES to be able to support fisheries research, assessment and management advice and other ecosystem approach related activities.
Scientific justification	<p>WGOOFE justification:</p> <p>Term of Reference a) To make the products of WGOOFE relevant and encourage them to be used within ICES, it is essential to engage users in the work of the WG, and not make the group a fora only for operational oceanographers.</p> <p>Term of Reference b) Available operational oceanographic products are to be used as initial products to initiate a dialogue with the users of their needs and possible use of the products.</p> <p>Term of Reference c) The dialogue will define improved products to better meet the user needs.</p> <p>Term of Reference d) To ensure regularity of the products to be delivered WGOOFE will identify the producers.</p> <p>Term of Reference e) Several large projects are running operational oceanographic services. To ensure the relevance of their works, WGOOFE will establish a close dialogue with these initiatives to stimulate for delivery of relevant (to ICES) products.</p>
Resource requirements	No specific resource requirements beyond the need for members to prepare for and participate in the meeting, and preferably participation

	from ICES data centre
Participants	The Group should have participants from organizations dealing with operational services and/or development of operational techniques, and participants that are identified of users of such products.
Secretariat facilities	None.
Financial	No financial implications.
Linkages to advisory committees	An obvious very close link with ACOM activities.
Linkages to other committees or groups	There would be a strong interaction with other experts groups within OCC such as WGZE, WGHABD, WGOH and WGRP, and modelling activities e.g. in WGPBI, PGNSP, NORSEPP, WGRED, REGNS. Later also with the ICES Advisory Programme.
Linkages to other organizations	The WG must interact with IOC/JCOMM/GOOS/EuroGOOS/ArcticGOOS/GMES/GEOSS. The group should also have a close relationship with MyOcean

2009/2/SSGSUE05 The **Stock Identification Methods Working Group (SIMWG)**, chaired by S. Mariani, Ireland, will meet in Öregrund, Sweden, 21-23 June 2010 to:

- a) Liaise with ICES working groups and study groups dealing with stock identification issues and provide technical reviews to these groups and SciCom;
- b) Review and report on new advances in stock identification methods as they develop, and new results that are relevant to ICES work;
- c) Review and report on all available multidisciplinary studies in Stock Identification, and produce a first draft "SIP" (Stock Identification Protocol) for the integration of results from multiple disciplines and most parsimonious advice;
- d) Review the scientific resources and tools available to ICES for investigating stock structure and determining appropriate management units, including technologies, sampling programmes, laboratories;
- e) Identify limitations and gaps in the scientific capacity of ICES for investigating stock structure and determining appropriate management units, including technologies, sampling programmes, laboratories;
- f) Consider stock identification methods used for non-fish biology (e.g. marine mammals) and whether any lessons may be learned for fish stock assessment;
- g) Develop terms of references based on a work plan for the next two years, which complement the objectives of the ICES science plan.

SIMWG will report by 30 July, 2010 (via SSGSUE) for the attention of SCICOM and ACOM.

Supporting Information

Priority	Stock structure research is essential to address high priority research topics in the ICES Science Plan associated with understanding ecosystem functioning (particularly fish life history information in support of EAM and intraspecific biodiversity), understanding interactions of human activities with the ecosystem, and sustainable use of ecosystems (particularly marine spatial planning and its role in the conservation of biodiversity).
Scientific justification	Stock structure and stock identification have been identified as part of the work programme of the Living Resources Committee and SIMWG continues to make progress on the development of its Stock Identification Methodology. After the publication of a book on Stock Identification Methods (2005), SIMWG has been working with assessment Working Groups to provide expertise and recommendations on stock structure and appropriate management units, continuing to update the ICES community and review best practices in related scientific disciplines.
Resource requirements	Some ICES financial and logistic support is required to assist the 2010 meeting.
Participants	15-20
Secretariat facilities	Additional resources required are negligible.
Financial	It will be necessary to assist with travel support
Linkages to advisory committee	Interaction with assessment working groups on stock identify and management units.
Linkages to other committees or groups	AGFM – Chairs of these two Working Groups are corresponding to ensure that there is no unnecessary overlap in their work.
Linkages to other	There are no direct linkages to other organizations.

organizations

Intersessional resolutions approved by correspondence in February 2010

2009/2/SSGSUE06 The Working Group on Multispecies Assessment Methods (WGSAM) chaired by Anna Rindorf*, Denmark and Jason Link*, US will meet in San Sebastian, Spain, 4–8 October 2010 to:

- a) Review further progress in multispecies and ecosystem modelling throughout the ICES region;
- b) Report on the development of key-runs (standardized model runs updated with recent data, and agreed upon by WGSAM participants) of multispecies and ecosystem models for different ICES regions (including the North Sea, Baltic Sea, Barents Sea and others as appropriate)
- c) Work towards implementing new stomach sampling programmes in the ICES area in 2011
- d) Define properties of ‘virtual multi-species datasets’ (including survey, catch and stomach content data) for use in multiple multispecies models, for comparison and sensitivity testing
- e) Investigate ways to communicate results from multispecies and ecosystem models to decision-makers, including development of food web indicators and visualization techniques
- f) Explore the feasibility of including introduced and invasive species in multispecies and ecosystem models
- g) Review estimates of abundance and productivity at lower trophic levels, and work towards the inclusion of such information in multispecies models
- h) Work towards inclusion of fleet dynamics in multispecies models

Of these, a and b are standing terms of reference, while c, d, g and h are ‘multi-year projects’

Longer-term aspirations (possible ToRs for future years)

Linking biogeochemical/hydrodynamical models to foodweb models

Including more spatial structure in models, and apply this e.g. to investigating the effects of marine protected areas

Advice on the ‘infrastructure’ needed to support ecosystem/multispecies advice and modelling (data collection including process studies, modelling needs, communication of results)

Linking ecology and economy – valuation of goods and services from the ecosystem, exploring trade-off between MSY, MEY and conservation objectives

Improve quantification of the role of top predators (marine mammals, seabirds, large pelagics) in the ecosystems

Connection with the ICES science plan

The work outlined above fits well with the high priority research topics given in the ICES Science Plan for 2009-2013, and apply to all three thematic areas (Understanding Ecosystem functioning, Understanding Interactions of Human Activities with Ecosystems and Development of options for sustainable use of ecosystems).

Requests to other groups:

BEWG: Produce a digitalized map of average benthos production and biomass by quarter and area for the North Sea (Same as last year)

Explanation

Benthic food plays a large role in the diet of several North Sea predators. Among these are haddock and grey gurnard, two species which are important predators of sandeel (haddock), cod and whiting (grey gurnard). Unfortunately, the WGSAM does not have any information on the yearly variation in benthos production and biomass and is therefore forced to assume these as constant. However, future developments of the SMS will likely be able to include spatial differences in biomass and production of prey and the BEWG should be able to describe these to WGSAM. With these data, the model can take account of whether e.g. northern areas differ from southern in the amount of benthos present.

WGMIXFISH: Provide quarterly data on catch-at-age by fleet in the North Sea for the longest period possible.

WGSAM will report by 15 November 2010 (via SSGSUE) for the attention of SCICOM and ACOM.

Supporting information

Priority	Multispecies assessment modelling is essential to the development of viable long-term management strategies.
Scientific justification	<p>The increased emphasis on ecosystem management (e.g. under the revised Common Fisheries Policy), and a move away from advising on single-stocks in isolation, necessitate consideration of interactions between key fish stocks and the ecosystems of which they are part.</p> <p>Historically the various ICES multispecies working and study groups have acted as a useful conduit, drawing together advice and quantitative outputs from many different assessment groups and combining these into an integrated product of direct use to managers and researchers. The 2009 meeting of WGSAM showed that there is much ongoing work within this field, and that there is a need for a pan-European forum for reviewing progress, and for learning about the 'best practice' of other research groups (ongoing ToR a).</p> <p>Multispecies models have often been used to provide updates of natural mortality M for inclusion in conventional single-species stock assessments. Consequently it is considered useful to have occasional 'key-runs' for each region, whereby time-series are updated and model configurations are agreed and 'peer reviewed' by a number of regional experts. WGSAM will continue to work towards improved key-runs in the Barents Sea, Bay of Biscay, Baltic and North Sea, as well as working towards significant improvements in model functionality, for example the better characterization of benthic food sources, and the development of cross-model validation techniques (ToRs b, d and g).</p> <p>Stomach content data serve as the basis for a plethora of multispecies, extended single-species, and ecosystem models. Having a solid foundation of adequate stomach content data are a prerequisite for implementing the ecosystem-based approaches to fisheries. Stomach sampling has been annual in some areas, while in other areas (e.g. the North Sea) a large effort ('Year of the Stomach') has been made sporadically. At the 2010 WGSAM meeting the group will work towards implementing new stomach sampling programmes throughout the ICES area in 2011 by reviewing protocols, pursuing new funding opportunities and gathering institutional support (ToR c).</p> <p>The ICES Science Plan for 2009-2013 specifically calls for research and advice with regard to the risks and threats posed by invasive and non-</p>

	<p>native species. There is currently relatively little information available concerning the role that such species might play in marine food-webs in the future, and little thought has been dedicated to understanding how other marine organisms might be displaced or affected once a new species has established itself. In 2010 WGSAM will consider how such issues might be modelled using the various approaches available and familiar to WGSAM participants.</p> <p>A major component of the current ICES/JRC process to define indicators of 'Good Environmental Status' for the forthcoming EU Marine Strategy Framework Directive, concerns the identification and parameterisation of indicators that reflect marine 'food-webs'. In 2010 WGSAM will investigate ways to communicate results from multispecies and ecosystem models to decision-makers, including development of food web indicators and visualization techniques. This fits with the priority identified in the ICES Science Plan, concerning "Effective communication of research results for inclusion in the advisory work at the strategic as well as the operative level".</p> <p>Other priority research areas that have been highlighted in the ICES Science Plan and which will be addressed by WGSAM at its 2010 meeting include: biodiversity and the health of marine ecosystems (ToRs f and g); top predators (marine mammals, seabirds, and large pelagics) in marine ecosystems (ToR b), Impacts of fishing on marine ecosystems (ToR h), Marine living resource management tools (ToRs b, d and h).</p>
Resource requirements	–
Participants	Approx 20. Expertise in ecosystem, modelling and fish stock assessment from across the whole ICES region.
Secretariat facilities	None
Financial	No financial implications
Linkage to advisory committees:	ACOM
Linkage to other committees or groups	AMAWGC, WGRED, WGEKO, SGMAS, WKEFA, SGMIXMAN, most assessment Expert Groups
Linkages to other organizations	–

2009/2/SSGSUE07 The **Working Group on Quantifying All Fishing Mortality (WGQAF)**, chaired by Philip MacMullen, UK, will meet at ICES Headquarters, Copenhagen, Denmark, 15–19 November 2010 to:

- a) Review and consider recent research into unaccounted mortality in commercial fisheries;
- b) Continue the process of planning (jointly with WGFTFB) a workshop that will elucidate best practice in devising and conducting survival experiments, interpreting the data generated by them, and result in a guidance manual;
- c) Further refine the process of reducing uncertainty in stock assessments and in the use of technical management measures; and
- d) Review progress in identifying species/fisheries most likely susceptible to unaccounted mortality and the indicators that can be used in that process.

WGQAF will report by 17 December 2010 (via SSGSUE) to the attention of SCICOM and ACOM.

Supporting Information

Priority	The current activities of this Group will lead ICES into issues related to the ecosystem affects of fisheries, especially with regard to the application of the Precautionary Approach. Consequently, these activities are considered to have a very high priority.
Scientific justification	<p>Theme Areas 1, 2 and 3</p> <p>Term of Reference a)</p> <p>This continuing ToR involves critical review of current and recent work as well as a role in coordinating and prioritizing future work. An increasing number of studies are being undertaken which may provide valuable insights into the impacts of fishing activities but which may also dilute effectiveness and confidence in the area.</p> <p>Term of Reference b)</p> <p>Leading on from ToR a) above, the subject would benefit from a review of methodology and interpretation. The last review of significant studies was undertaken in 2000 by the WGFTFB Topic Group on Unaccounted Mortalities. A review of more recent work will determine the need for revision and update on planning and methodology for studying this subject and how these aspects can be applied to groups of species that are 'novel in terms of their current distribution or their spatial responses to temperature change..</p> <p>Term of Reference c)</p> <p>All fishing activities have influences that extend beyond removing target species. The approach recommended by FAO is that responsible fisheries technology should achieve management objectives with a minimum of side effects and that they should be subject to ongoing review. WGFTFB members and others are currently undertaking a range of research programmes to provide the means to minimize side effects; assessment WGs could benefit from specialist advice where, through their own reports, there are concerns over unaccounted mortality.</p> <p>Term of Reference d)</p> <p>Limited resources and a short time frame both indicate strongly that UM research should be targeted appropriately</p>
Resource requirements	The research programmes which provide the main input to this group are already underway, and resources are already committed. The additional resource required to undertake additional activities in the framework of this group is negligible.
Participants	The Group is normally attended by some 10-15 members and guests.
Secretariat facilities	Minimal
Financial	Minimal
Linkages to advisory committees	Through ICES Steering Group on Sustainable Use of Ecosystems.
Linkages to other committees or groups	WGQAF links closely with WGFTFB and WGEKO. It is also endeavoring to strengthen links with all appropriate assessment WGs.
Linkages to other organizations	The work of this group is closely aligned with similar work in FAO and with an increasing number of commercially orientated bodies such as RACs and seafood industry representative organizations.

2009/2/SSGSUE08 The **Working Group on Fishery Systems (WGFS)** chaired by K. H. Hauge, Norway, will meet at ICES Headquarters, Copenhagen, 11–15 October 2010 to:

- a) Review and generate recommendations about the future structure of risk evaluation and management strategy research within ICES toward greater inclusiveness across the fisheries system and greater usefulness in policy advice. This includes reevaluating the role of WGFS in light of several other ICES groups involved in risk evaluation and management strategy.
- b) Evaluate the past contribution of WGFS activities on ICES as a way to inform future directions;
- c) Review ongoing work in social network analysis on the science - policy boundary.

WGFS will report by 1 December 2010 (via SSGSUE) for the attention of SCICOM and ACOM.

Supporting Information

Priority	The main focus of WGFS is the fishery system and the role of scientific advice within that system. The system-based approach relates directly to priorities such as developing an ecosystem-based approach to management and the effective implementation of the precautionary approach. Consequently, these activities have a very high priority. The work of the Group is also essential if ICES is to advance the development of realistic projections of fisheries development that account for the reaction of other parts of the overall fisheries system.
Scientific justification	The Group met in 2000, 2001, 2003, and 2004 to develop a framework for case study analysis and has identified European (North Sea cod) and North American (Georges Bank mixed fisheries) case studies. Funding for the European case study had been granted from 2003 under the EU Framework V Programme; funding for the North American study was granted from 2004. This effort resulted in 7 papers that were published in the special issue of the ICES JMS based on the Symposium on Management Strategies held in Galway in 2006. The key role for the WGFS is to integrate across disciplines to develop analytical and investigative methods/approaches for studying fishery management systems. The main but not exclusive focus of these investigations of the overall fisheries system is to improve the effectiveness of scientific advice. The Group met in 2005 in conjunction with the PKFM, FEMS and EASE projects all of which dealt with organizational and institutional aspects of the production of scientific advice. The 2006 meeting placed a strong emphasis on the ecosystem-based approach and particularly the issue of spatial planning. The 2007 meeting also considered and provided specific recommendations in relation to ICES current reorganization of the advice system, especially in respect to the European Marine Strategy and the role of the Regional Advisory Council. The 2008 meeting invited experts from policy arenas outside fisheries to discuss the ways they handle uncertainty in making scientific advice. The 2009 meeting discussed experiences with participatory modelling and ICES options for socio-economic advice.
Resource requirements	Secretariat support for meeting.
Participants	These include scientists working with fisheries management, both from an economic, social and biological perspective. Participation is from ICES countries and scientists both from disciplines and scientific circles not traditionally represented at ICES.
Secretariat facilities	No additional software/hardware is anticipated beyond that which is currently available.
Financial:	No financial implications.

Linkages to advisory committees	The goal for this Working Group is to better understand fishery management systems which is a central element of the work of ACOM.
Linkages to other committees or groups	Close links to SGMAS and SGRAMA who address the technical aspects of management strategies.
Linkages to other organizations	WGFS will continue to seek to widen participation for this group, including contact with relevant academic and inter-governmental organizations.

2009/2/SSGSUE09 The Study Group on the evaluation of assessment and management strategies of the western herring stocks (SGHERWAY) chaired by Emma Hatfield, UK will meet at ICES Copenhagen, Denmark, 24–26 March 2010, and in Dublin, Ireland, 14–18 June, 2010 to:

- a) Evaluate the utility of a synoptic acoustic survey in summer for the Hebrides, Malin and Irish shelf areas, in conjunction with WGIPS surveys of VIaN and the North Sea;
- b) Explore a combined assessment of the three stocks and investigate its utility for advisory purposes;
- c) Evaluate, through simulation, alternative management strategies for the metapopulation of VIaN, VIaS and VIIaN, considering the maintenance of each spawning component in a healthy state.

SGHERWAY will report by 30 July 2010 (via SSGSUE) for the attention of SCICOM and ACOM.

Supporting information

Priority:	It is expected that this work will resolve issues surrounding the assessment and management of the herring stocks to the west of the British Isles. Its impact is expected to be high and consequently this work is considered to have a very high priority.
Scientific Justification	<p>The EU funded project WESTHER evaluated the uncertain stock identity of herring stocks to the west of the British Isles. Its results suggested a rearrangement of the stocks as they are currently assessed and these results now need to be taken forward into the assessment and management process.</p> <p>We recognize the need to provide sound management advice for the western herring areas, and in particular the importance of ensuring as far as possible that there is no depletion of local components. HAWG noted that WESTHER was not funded to evaluate the extent of mixing in the fisheries or to evaluate alternate management strategies for the area. Currently it is unclear what management regime would provide the most cost-effective method for successful management and what data would be needed to support this management.</p> <p>We consider that it is necessary to move towards an integrated management plan for this area through a series of iterations involving the following steps :-</p> <ul style="list-style-type: none"> • Investigation of combined assessment of the three currently assessed stocks, VIaN, VIaS and VIIaN (to be called the Malin Shelf stock), including an investigation of the utility of a combined acoustic survey. • Examination of alternative management strategies based on their

	<p>ability to deliver protection to local populations and provide cost-effective information applicable for management of the two proposed stock units of herring to the west of the British Isles (Malin Shelf and Celtic Sea).</p> <ul style="list-style-type: none"> • Amendment of existing, or development of new, cost-effective assessment and data collection schemes which will be required to support this management. <p>SGHERWAY supports directly ICES Goals 1, 3 and 4 in the action plan, specifically 1.11, 3.4, 4.1, 4.2, 4.3 and 4.15.</p>
Resource Requirements	It is proposed that these would constitute the final two meetings of SGHERWAY. It is intended that there would be 8-10 participants, meeting for 3 and 5 days respectively, with intersessional work required.
Participants	Herring biologists and scientists experienced in assessment and management strategy evaluation, from Ireland, Norway, The Netherlands, and the UK have agreed to attend the study group.
Secretariat Facilities	None, other than formatting and publishing of the final report.
Financial:	There are virtually no financial implications
Linkages To Advisory Committees	The study group will provide information to ACOM. This group feeds into the advisory process.
Linkages To other Committees or Groups	This SG is essential to the work of HAWG and will have clear links to WGIPS and SGSUE.
Linkages to other Organisations	None

2009/2/SSGSUE10 The Working Group on Methods of Fish Stock Assessment (WGMG)
chaired by José de Oliveira*, UK will work by correspondence during 2010 to:

- a) Work with SCICOM and ACOM to build the ICES Initiative on Stock Assessment Methods;
- b) Prepare by correspondence for the forthcoming Workshop on Reviews of Recent Advances in Stock Assessment Models Worldwide in September 2010;
- c) Consider the structure and function of a science group on stock assessment methods within ICES.

WGMG will report by 1 December 2010 (via SSGSUE) for the attention of SCICOM and ACOM.

Supporting Information

Priority:	The work of this group is essential to ICES to progress in the development of methods for fish stock assessment and advice.
Scientific justification	<p>The approach taken for the 2009 WGMG meeting was different from previous years. ToRs were developed intersessionally by the WGMG Chair in consultation with benchmark and assessment Working Group chairs. The intention behind this was to ensure the relevance of WGMG output to the direct requirements of forthcoming benchmark and assessment meetings.</p> <p>However, WGMG concluded in 2009 that this approach had not been successful. There was considerably less buy-in to the process from benchmark and assessment Chairs than had been anticipated, with requests submitted by only five individuals – three of whom are WGMG members. The idea of finalizing the ToRs during summer has also been counter-productive. Many institutes plan their travel budget at the start of the year, and it is clear (from the low participation in this year's meeting) that a WGMG with no defined ToRs was a low priority for many who may otherwise have attended.</p> <p>During this year's WGMG meeting a request was received from the ICES Secretariat to continue the current practice, and indeed to extend it so that WGMG becomes even more entwined with the benchmark process. WGMG does not agree that this is a useful way forward, for the reasons given above – it is also likely that many WGMG members will attend the 2010 benchmark meetings in other capacities in any case. We suggest a Workshop for 2010 instead and further involvement in development of the ICES Initiative on Stock Assessment Methods.</p> <p>In the longer term, it is the view of WGMG members that the group should function in an ongoing research capacity with longer term goals than trying to find quick fixes to today's assessment problems (the benchmark meetings are the place to do that, if needed). An example from the last two meetings has been developments in the SURBA survey-based assessment method: these developments have not yet reached the stage where they can be applied in assessment Working Groups, but there has been measurable and valuable progress within WGMG. There is no other forum in ICES that permits this longer term view and it would be unfortunate if it were lost.</p>
Resource requirements	None
Participants	Research scientists involved in stock assessment methods from the ICES area and invited scientists from outside the ICES area.
Secretariat facilities	None, other than formatting and publishing of the final report.
Financial:	No financial implications
Linkages to Advisory	ACOM has strongly supported the work of this group and has worked

Committees	actively in formulating the ToRs for recent meetings. WGMG will also report to ACOM in 2010.
Linkages to other Committees or Groups	WGMG will report to the SCICOM by December 2010.
Linkages to other Organisations	There is similar work going on within ICCAT and NAFO. Coordination should be assured.

2009/2/SSGSUE11 The Workshop on Reviews of Recent Advances in Stock Assessment Models Worldwide “Around the World in AD Models” (WKADSAM) chaired by Coby Needle, UK*, and Chris Legault*, USA will meet in Nantes, France, 27 September to 1 October 2010 to collate, review and comment on stock assessment methods currently in use around the world.

This will be part of the ICES initiative on stock assessments methods.

The workshop will:

- a) Determine the key techniques and approaches used to assess fish stocks
- b) Consider inter alia utility, ease of use, estimation procedures, robustness, suitability to different data richness, applicability to data poor situations, and relevance of assumptions in the models
- c) Summarize the advantages and disadvantages of the various methods, and describe the appropriate use.
- d) Comment on demonstrations by model developers of the utility of methods with case studies and simulated datasets, focussing on the question: What problem has the method fixed?
- e) Prepare the groundwork for a following workshop in 2011 or 2012 (see initiative plan below)

WKADSAM will report by 1 December 2010 (via SSGSUE) for the attention of SCICOM and ACOM.

Supporting Information

Priority	The work of this group is essential to ICES to progress in the development of methods for fish stock assessment and advice.
Scientific justification	This workshop forms the essential first part of a proposed ICES initiative to carry out a review of the assessment methods currently in use worldwide. Knowledge gained at the workshop will be used to inform plans for the second and third phases, respectively a major international conference on stock assessment methods (in the second year) and a published review (in the third year). The purpose of the initiative is develop, improve and otherwise modernise the stock assessment methods used by ICES assessment working groups, and thereby improve the provision of scientific fisheries management advice in years to come.
Resource requirements	None.
Participants	ICES does not intend to carry out this review in isolation. It has already approached and received support from FAO and is about to approach ICCAT, IATTC, CCSBT, NAFO and IPHC. It is also proposed to approach the network of Regional Fisheries Organizations Secretariats hosted by FAO. In addition individual institutes/countries will be approached: in Australia; New Zealand; Japan; South Africa plus non- ICES scientists in Russia, USA and Canada.

Secretariat facilities	None required in 2010
Financial	This is part of the initiative on stock assessment methods.
Linkages to advisory committees	The initiative will be jointly managed by ICES ACOM and SCICOM with input from the ICES Working Group on Methods of Fish Stock Assessments.
Linkages to other committees or groups	WKADSAM will report to WGMG and the SCICOM by December 2010.
Linkages to other organizations	Linkages to other organizations: see above.

2009/2/SSGSUE12 The **Study Group on the History of Fish and Fisheries** (SGHIST), chaired by Bo Poulsen, Denmark and Georg Engelhard*, UK, will meet in Ponza, Italy, 11–14 October 2010 to:

- a) coordinate the data recovery activities for historical information on fish, fisheries and marine ecosystem;
- b) develop methods that can be applied to historical data in order to estimate long-term dynamics of stock, fishing fleet and fishing technologies, including technological creeping;
- c) develop methods for the spatial analysis of fish and fisheries historical data;
- d) carry out cross-regional comparisons of fish and fisheries in the North Atlantic, focusing on the analysis of species key predator species in the different eco-regions.

SGHIST will report by 15 November 2010 (via SSGSUE) for the attention of SCICOM and ACOM.

Supporting information

Priority	The activities of this Group will improve the understanding of the long-term changes in fish stocks productivity and structure of the marine ecosystems. Consequently these activities are considered to have a high priority.
Scientific justification	There is growing interest in historical data on fish and fisheries and the past marine ecosystem in general. The interest is on the discovery, recovery, digitization and analysis of historical data. The analysis of historical data is expected to give insight in long-term historical trends in fish stocks and fisheries which can be related to exploitation and long term changes of the marine environment. The work links to the History of Marine Animal Populations project that is funded under the Census of Marine Life and which aims to discover historical data sources. Several fisheries research institutes in Europe have started to make inventories of historical information and the workshop is intended to bring these initiatives together. WKHIST 2008 and SGHIST 2009 have recommended that a project should be set up to recover the historic information that has been collected by marine research institutions and zoological museums around the North Atlantic and the Mediterranean. SGHIST will oversee that project. SGHIST will link with methodological experts to advance the methodologies for analyzing historic data including methods for using meta-information from different areas.
Justification of venue (in a non-ICES Member Country)	Italy has previously participated with expertise at several ICES meetings and planning groups together with ICES members. The meeting will be

	<p>kindly organized in conjunction with the Department of Human and Animal biology, University of Rome (reference person, Dr. Francesco Colloca; francesco.colloca@uniroma1.it and Prof. G.D. Ardizzone). The Department of Human and Animal biology, University of Rome has participated to several EU projects together with ICES members, for instance the BECAUSE and INDECO projects. Also, they have hosted a BECAUSE meeting in 2007. The Department of Human and Animal biology, University of Rome will also provide facilities for the meeting. Some of the invited scientists (Dr. Francesco Colloca, Department of Human and Animal biology, University of Rome) have already participated and co-hosted previous ICES working groups as WKHRPB in 2008 and 2009. A scientist (Dr. Francesco Colloca) from Rome University will participate as expert in workshop and the location will attract also experts from the Mediterranean area. Dr. Francesco Colloca has good expertise in R and history of fish in general that will largely enhance the possibility to fulfil the ToRs of the EG. Also, he is responsible of the EVOMED EU project on the reconstruction of historical data of fisheries of the Mediterranean Sea using fisherman tally books. Finally, there will not be any large additional cost to the ICES participants; on the contrary, accommodations and facilities will be in general cheaper than in Copenhagen.</p>
Resource requirements	No specific requirements
Participants	The Group should be attended by some 15 members and guests. Attendance from the Mediterranean countries is foreseen.
Secretariat facilities	None.
Financial	No financial implications.
Linkages to advisory committees	Linked to ICES proposal for the digitization, analysis and interpretation of plankton data for pre - 1914 ICES sampling in the north sea and adjacent waters.
Linkages to other committees or groups	There is a very close working relationship with all the groups of the Fisheries Technology Committee. It is also very relevant to the Working Group on ecosystem Effects of Fisheries.
Linkages to other organizations	Census of Marine Life / History of Marine Animal Populations

2009/2/SSGSUE13 The **Study Group on VMS data, its storage, access and tools for analysis (SGVMS)**, chaired by Heino Fock*, Germany, and Vanessa Stelzenmüller*, Germany, will meet in Hamburg, Germany, 8–9 September 2010 to:

- a) Provide expert advice regarding VMS data, with particular reference to:
 - i) ICES strategic position regarding VMS data, the level of involvement required in the short, medium and long term;
 - ii) Storage and management of the data;
 - iii) Access to raw data and data products;
 - iv) Data products;
 - v) Tools and methods for analysis;
 - vi) Quality assurance, quality control and quality flags.

SGVMS will report by 4 October 2010 (via SSGSUE) for the attention of SCICOM, ACOM, SSGHIE, WGDIM, and PGCCDBS.

Supporting information

Priority	VMS data is an increasingly important and growing data resource for fisheries management. The use of this data is at an early stage, protocols, analysis tools and methods are being developed, it is essential that ICES keeps pace with and ideally is involved with this work.
Scientific justification	<p>The current EU Data Collection Framework (DCF - Council Regulation (EC) No 199/2008) has been elaborated in terms of the use of VMS data to provide near real-time updates of certain environmental indicators to measure the effects of fisheries on the marine ecosystem (Commission Decision 2008/949/EC). From appendix XIII of the Commission Decision, the relevant VMS-based indicators are:</p> <p>Distribution of fishing activities</p> <p>Indicator of the spatial extent of fishing activity. It would be reported in conjunction with the indicator for 'Aggregation of fishing activity'.</p> <p>Aggregation of fishing activities</p> <p>Indicator of the extent to which fishing activity is aggregated. It would be reported in conjunction with the indicator for 'Distribution of fishing activity'</p> <p>Areas not impacted by mobile bottom gears</p> <p>Indicator of the area of seabed that has not been impacted by mobile bottom fishing gears in the last year. It responds to changes in the distribution of bottom fishing activity resulting from catch controls, effort controls or technical measures (including MPA established in support of conservation legislation) and to the development of any other human activities that displace fishing activity (e.g. wind farms).</p>

Scientific justification (continued)	<p>As guidance on the development of these indicators was provided by ICES to the European Commission's STECF sub-group on research needs, and as a major client of ICES, it can be anticipated that the European Commission will expect ICES to provide a lead on the provision of such indicators. Furthermore, they cannot be calculated without corresponding information from relevant non-EU Member States. Consequently there is a need to identify proposals for how ICES scientists and Expert Groups should gain access to VMS data in the future and what data interface, interrogation, display, analysis and interpretation tools ICES should obtain or develop.</p> <p>Although these environmental indicators are explicitly identified in EU legislation, the use of VMS-based data underlies a broader advisory remit in terms of marine spatial planning and management that ICES must be equipped to address in the near future.</p>
Resource requirements	None.
Participants	We would anticipate a large amount of interest in the group as it has potential to provide solutions and advice applicable to individual ICES members as well as ICES as an organisation.
Secretariat facilities	<p>Possibly meeting facilities, sharepoint site etc.</p> <p>Input and involvement from the DataCentre would be essential for technical discussions relating to storage and access to the data, if the group felt ICES should be holding it.</p>
Financial	Dependant on meeting venue, attendance from Data Centre representative.
Linkages to advisory committees	<p>The use of VMS data can be applied across multiple Expert Group and as such the direct linkage to advisory committees is unclear at this stage. One of the tasks of the group would be to formulate ICES' position in this field, and from this the linkages and value of the data resource should become apparent.</p> <p>The study group report and recommendations will be sent directly to ACOM for the leadership to prioritise and make appropriate resolutions.</p>
Linkages to other committees or groups	The use of VMS data is increasingly important in modelling fleet dynamics and therefore could have input to multiple other expert groups when the tools, methods and data sets mature. WGECO and WGDEC are ICES expert groups actively using VMS data.
Linkages to other organizations	VMS data is being used by the majority (if not all) of ICES' members, but as yet there is limited international focus.

Intersessional resolutions approved at mid-term meeting of SCICOM in May 2010

2009/2/SSGSUE14 The MARIFISH-ICES Joint Workshop on Integrated ecosystem modelling: building our capacity to understand and manage marine ecosystems in a changing world (WKIEM), chaired by: M. Bernal, Spain, I. Allen, UK, S. Neuenfeldt, Denmark, E. Curchitser USA, and J. Ruiz, Spain will meet in Spain, 16–18 November 2010 to:

- a) Review and document marine ecosystem integrative modelling approaches implemented at different ongoing EU and worldwide projects;
- b) Analyse potential comparison/validation/integration of results from the different projects;
- c) Design a coordinated program to disseminate and discuss results obtained from related projects and scientific networks.

A maximum number of attendees of 25 are foreseen.

WKIEM will report by 17 December 2010 (via SSGSUE) to MARIFISH and SCICOM.

Supporting information

Priority	The rationale for this symposium proposal is to attract different teams of scientist currently working on the development of integrated ecosystem models, and to create a discussion forum in which the details of different approaches are discussed, both from a technical and an ecological point of view. Given the large number of recently approved EU projects which use related methods (e.g. MEECE, FACTS, REPRODUCE, SESAME, etc.), one of the main scopes of the symposium/WK will be to improve the communication and coordination between those projects, and to attract scientist from related projects outside the EU scientific community. This objective links with one of MARIFISH main goals; to coordinate ongoing multi-national research themes related to the marine ecosystem and fisheries. The topic of the workshop is also of importance to ICES, as it addresses a holistic ecosystem modelling approach, which allows to integrate bottom up (climate) and top down (predators and fisheries) effects on intermediate trophic levels, such as small pelagics, which sustain fisheries of large importance.
Scientific Justification	<p>ToR a) The different approaches, model families and assumptions taken on the different ongoing projects will be presented at the workshop. Nutrient and lower trophic levels, full life cycle of intermediate trophic levels and upper trophic levels, including the socioeconomic aspects of human exploitation will be analysed.</p> <p>ToR b) The potential for comparison and cross-validation of results from different case scenarios and projects will be evaluated. Interchange of data and assumptions from different projects which can be of use to initialize or validate the different models will be identified, as well as common areas where new experimental or survey data will be desirable.</p> <p>ToR c) Common ways to disseminate and discuss results of the ongoing projects will be designed at the workshop. In particular, the potential interaction with EUROCEANS, and the proposal of a dedicated ICES ASC theme session will be evaluated.</p>
Resource Requirements	None
Participants	20-25
Secretariat Facilities	Sharepoint

Financial	Support from MARIFISH
Linkages	WGPBI, WGOOFE, WGDIM
Linkages to other Organizations	MARIFISH, EUROCEANS, CAMEO

2009/2/SSGSUE15 Joint ICES and Pelagic RAC Workshop on Pelagic Fisheries within the Marine Ecosystem: Tradeoffs and potential benefits of the Ecosystem Approach (WKPELECO), chaired by Aukje Coers, the Netherlands, Mark Dickey-Collas, the Netherlands, Christian Olesen, Denmark, Sean O'Donoghue, Ireland, will meet in Amsterdam, The Netherlands, 29–30 September 2010 to:

- a) Consider three aspects of the ecosystem approach and pelagic fisheries through workshops:
 - Environmental Variability – sustainable exploitation and management in a variable environment
 - Sharing fish – the ecological and economic tradeoffs of exploiting pelagic fish
 - Crowded Seas – spatial claims to the sea and multifunctional use
- b) Suggest a framework to develop and achieve management objectives;
- c) Report on how to ensure the optimal use of information to support and inform this process.

WKPELECO will report by 1 December 2010 (via SSGSUE) for the attention of SCICOM.

Supporting information

Priority	This work shop is a high priority and shows that the Pelagic RAC is eager to engage with ICES to help develop further the ecosystem approach as applicable to Pelagic fisheries. The workshop should be seen in the context of the European Union's drive to implement the marine strategy framework directive. It also shows the importance being placed by SSGSUE on integrated approaches to sustainable use of the ecosystem. It is also innovates by forming a strong and useful partnership between ICES SCICOM and one of the more active RACs.
Scientific Justification	<p>This workshop fulfils many of the science objectives of the ICES Science plan. The workshops are designed to stimulate the following discussions:</p> <p>Workshop 1: Environmental variability</p> <p>Investigate how changes in the environment affect pelagic fish stocks. How do changes in ecosystem carrying capacity and oceanography effect exploitation, management and decision making. Observed changes in the past will be discussed in order to identify general relationships, which might help planning the future. The potential for process understanding to inform future scenarios will also be considered. Can management assume stability in the system and how does it deal with changes in productivity and distribution of fish?</p> <p>Workshop 2: Sharing fish</p> <p>Several approaches will be used to consider the 'Ownership of fish stocks'. For instance, considering the trade-offs between exploitation and other ecosystem services of pelagic fish; the interactions of pelagic fish with other parts of the ecosystem and whether decisions for higher management objectives need to be made for managing fisheries in a pelagic or demersal</p>

	dominated system.
	Workshop 3: Crowded seas
	Interactions among different users of the seas and how policy should develop. When an integrated approach is implemented; how will the pelagic section response: fight, fright or flight? Consideration will be given to who has primacy on use of the sea; how will land based activities and utilisation of the coastal zone affects pelagic fisheries; what will the impact of structures such as wind farms be?
Resource Requirements	The Pelagic RAC will provide and arrange the resources, other than those listed below
Participants	30
Secretariat Facilities	Share point and publicity on the ICES web site. The usual ICES secretarial support. The Sharepoint
Financial	Support from Pelagic RAC
Linkages	WGWIDE, HAWG, ACOM, WGECO, SGBYC, WGIPS, WGNAPES, WGFE, WGFS, WGSAM, WGISUR, WGMME, WGSE, WGEXT, WKEID
Linkages to other Organizations	European Commission, Pelagic RAC, NEAFC